the American side is now to be supplemented by an equal amount, the constructions for which are well under way. It is expected that about 50,000 horse-power will become available on the Canadian side toward the end of the coming summer, and contracts already signed contemplate a total of not less than 110,000 horse-power in units of 10,000 horse-power each, double the first unit, then considered a tremendous experiment. A new company, the Ontario Power Company, on the Canadian side, contemplates a plant to deliver 50,000 horse-power at the start and 150,000 ultimately. This, like the original corporations on both sides the gorge, is largely backed by capital from the United States. A new company will probably be presently authorized by the Canadian government, which will presumably, at the start at least, be wholly Canadian. This will mean the further development of 100,000 horse-power. About 350,000 horse-power may thus be expected to be soon supplied, and it is computed that it will result in the influx of about $7,000,000 annually as rental. Within ten years, it is prophesied that a million of horse-power at least will be developed at Niagara Falls.

Efforts have been made to observe the effect of the present maximum draught of water from the falls; but the most careful measurements and observations are reported to have failed in indicating, much less measuring, any effect when the power is turned on and off. The effect of a wind blowing up or down channel is, on the other hand, very observable, and a heavy blow may alter the level of the water at the entrance to the Niagara River and at the head of the rapids by several feet; but its effect at the falls is too slight to be readily observed, except by those who are familiar with the river in all its aspects.

The horse-power of Niagara is a somewhat uncertain quantity, and is variable with every wind and with every change of season. The first survey, made with the object of measurement of the power available at the falls, was, if the writer is not misinformed, that of Mr. L. M. Wright, a quarter of a century ago, or more, who employed the famous ferryboat, *Maid of the Mist,* driving her stem up under the cataract as closely as the swift current would allow, and securing measurements of rate of flow at that and other cross-sections of the river. He allowed the writer to make extracts from his notes at the time.

He found the section thirty yards below Chippewa Creek to measure 6,667 feet across, with a depth of 15 feet. He estimated the minimum power of the total fall as 11,363,636 horse-power, and the maximum as a third greater; the variation being due to the action of the winds on the Great Lakes. These figures are probably too great. A number of estimates have been since published, usually much less. The Lake Survey gave, for example, as reported, about 280,000 cubic feet, per second, as the flow at the falls; while the pioneer observer gave 500,000. Taking the two as extremes, it is perhaps safe to assert that the extinction of the falls, either by diversion into industrial power or by their cutting back to the upper lake, may be expected to be not likely to prove a burning question with this generation.

And yet, with a third of a million horse-power already practically preëmpted, with our forests disappearing, with a corner in the coal market already, and other strikes to come, and with the brink of the falls retreating with accelerated rapidity, it is possibly unwise to bank heavily upon that expectation. But, however this may be, the Falls of Niagara will surrender hundreds of thousands of horse-power in the current decade, and all this power will be distributed electrically and much of it employed in electrical processes of manufacture. R. H. T.

SCIENTIFIC NOTES AND NEWS.

THE Desmazières prize of the Paris Academy of Sciences has been awarded to Professor Roland Thaxter, of Harvard University, for his study on the parasitic fungi of American insects.

THE Carnegie Institution has appropriated $4,000 to the Yerkes Observatory, to be expended under the direction of Professor George E. Hale, for certain researches in astronomy

and astrophysics. These will comprise: (1) A photographic investigation of stellar parallaxes by Dr. Frank Schlesinger, now in charge of the International Latitude Observatory at Ukiah, California. (2) Investigations in stellar photometry, to be made by Mr. J. A. Parkhurst. (3) A detailed study of several hundred photographs of the sun, taken with the spectroheliograph at the Kenwood Observatory in the years 1891–1896. Mr. Philip Fox, formerly instructor in physics at Dartmouth College, is assisting Professor Hale in this work. (4) Certain investigations in solar and stellar spectroscopy, to be undertaken by Professor Hale as soon as the new horizontal reflecting telescope, recently injured by fire, has been completed.

Professor Frederick W. Putnam, curator of the Peabody Museum, has been awarded the Lucy Wharton Drexel medal of the Franklin Institute of Philadelphia for his distinguished work in American archeology.

Commander Robert E. Peary, U.S.N., was elected president of the American Geographical Society, New York, at its annual meeting on January 27.

Professor E. B. Wilson, of Columbia University, has received leave of absence for the second half year, and will be at the Naples Zoological Station from February until July. During his absence the direction of the Department of Zoology at the university will be assumed by Professor Bashford Dean, to whom communications for the department should be addressed.

Dr. J. F. Newsom, associate professor of mining and metallurgy in Stanford University, has returned from a visit to the principal European schools of mining.

President H. S. Pritchett, of the Massachusetts Institute of Technology, is confined to the house by an injured knee, due to the fall of a horse that he was riding.

National Geographic Magazine (Washington) for February is authorized by Mr. William Ziegler, of New York City, to announce that he intends to send forth another north polar expedition this summer. The party will go north on the *America*. The personnel of the expedition is not yet complete, so that a list of the members can not now be given.

Mr. W. N. MacMillan, of St. Louis, with Mr. Isidore Morse, of Boston, and Colonel John Harrington, of the British Army, have started on an expedition to explore the course of the Blue Nile.

Professor R. H. Richards, of the Massachusetts Institute of Technology, has just completed a short course of lectures on ore-dressing, in which he set forth the results of his exhaustive study on this subject, at the Missouri School of Mines at Rolla, Mo.

Mr. Charles Francis Pidgin, chief clerk of the Massachusetts Bureau of Statistics, has been appointed chief of the bureau, to succeed Mr. Horace G. Wadlin, who has become librarian of the Boston Public Library.

Dr. Brouardel, honorary dean of the Paris Faculty of Medicine, has been presented with a plaque by his former students, engraved by M. Roty.

M. H. Poincaré, the eminent mathematician and physicist, has been made a commander of the Legion d' honneur.

Professor Robert Helmert, director of the Geodetic Institute of Potsdam, has been given the honorary doctorate of engineering by the Polytechnic School at Aix.

Mr. Herbert Kynaston has been appointed by the British Colonial Office director of the Geological Survey of the Transvaal.

The hundredth anniversary of the birth of Heinrich Daniel Rhumkorff was celebrated at Hanover on January 15. A tablet was placed on the house in which he was born and a new street was given his name. Professor W. Kohlrausch made an address on Rhumkorff's scientific work.

David Phillips Jones, chief engineer, U.S.N. retired, and formerly professor at the Naval Academy, died at Pittsburgh on January 30.

Mr. Elnathan Sweet, a well-known civil engineer, died at Albany, N. Y., on January 26, aged sixty-six years.

Dr. John O. Quantz, professor of psychology in the State Normal School of Oshkosh,

Wisconsin, died of heart trouble on Saturday, January 24. He was called to the position at Oshkosh about a year and a half ago. He was an able and accomplished scholar and an educator of great promise. His brilliant mind and scholarly achievements three times secured for him recognition in the way of fellowships from three American universities. For two years after graduating as honor man at Toronto he was fellow in psychology in the University of Wisconsin, which institution bestowed upon him the degree of doctor of philosophy in 1897. Clark University, Worcester, Massachusetts, then honored him with a fellowship for a year, and Cornell for the year following. He was born near Toronto, Canada, about thirty-five years ago. In his professional career he had gained a large circle of admiring and steadfast friends. T. L. B.

THE cablegram from Edinburgh which we quoted last week to the effect that Mr. Andrew Carnegie would establish with $5,000,000 an endowment for scientific research in Scotland is said to be without foundation. Under these circumstances we almost hesitate to quote the item in the daily papers this week to the effect that Mr. John D. Rockefeller will give $7,000,000 for the erection and endowment of a research hospital in connection with the Medical Department of the University of Chicago.

WE are sometimes compelled to quote from the daily papers announcements of gifts and endowments without assurance of their correctness, but we refrain from quoting medical discoveries, otherwise it would be necessary to announce cures for blood poisoning, hay fever and pneumonia, and the discovery of the bacillus of hydrophobia. The name given to the alleged bacillus of the latter disease reads as though it might be correct 'Coccus babyllus polymorphus lissac.'

Nature quotes from a German newspaper an item to the effect that Dr. Dohrn, of Naples, having appealed with little result to the German minister of education for financial aid in the extension of his world-famed biological station, sought an interview with the Kaiser. Remarking sympathetically that he could not provide all that Dr. Dohrn desired from his private purse, the Kaiser furnished him with a donation form, headed by himself and a contribution of £1000 commanding that it should be circulated among the leaders in Berlin society, for return to the Kaiser in person. The result was that within a few days the magnificent sum of £15,000 was subscribed.

THE new lion house of the New York Zoological Park was opened on February 2. It is said to be the finest building for this purpose in existence. The main corridor is 192 feet long, some of the cages, which are enclosed by netting instead of iron bars, being as large as 18 x 22 feet. The building includes a studio for artists with a special cage.

THE daily papers state that the University of Chicago has received from Sir William Van Horne of Montreal a collection of fossils valued at $30,000.

A LARGE collection of sea anemones from the coast of Chili has been examined for the Royal Museum of Berlin by Dr. J. Playfair McMurrich, professor of anatomy in the University of Michigan. Dr. McMurrich's report will be published in a future number of the *Zoologische Jahrbucher.*

ENGLISH papers state that Sir Ernest Cassel has offered to give £40,000 towards the study and investigation of ophthalmia in Egypt.

THE board of directors of the American Institute of Electrical Engineers has passed a resolution disapproving of the establishment on the part of N. Y. state of an electrical laboratory and standardization bureau.

TELEPHONIC communication has been established between Paris and Rome, which is the longest line in Europe, though it is surpassed in America. The distance from Paris to Rome is 1,593 km. and from Paris to Berlin 1,115 km.

UNIVERSITY AND EDUCATIONAL NEWS.

HARVARD UNIVERSITY receives $50,000 by the will of Rebecca C. Ames, the income to be used for the support of poor students.